

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C12N 15/61, 9/90, 15/85, 5/10, C12Q 1/533		A1	(11) International Publication Number: WO 00/43526 (43) International Publication Date: 27 July 2000 (27.07.00)
(21) International Application Number: PCT/US00/00938		(72) Inventors; and	
(22) International Filing Date: 18 January 2000 (18.01.00)		(75) Inventors/Applicants (for US only): SNYDER, Solomon, H. [US/US]; The Johns Hopkins University, Suite 906, 111 Market Place, Baltimore, MD 21202 (US). WOLOSKER, Herman [US/US]; The Johns Hopkins University, Suite 906, 111 Market Place, Baltimore, MD 21202 (US). SHETH, Kevin [US/US]; The Johns Hopkins University, Suite 906, 111 Market Place, Baltimore, MD 21202 (US). MASAAKI, Takahashi [US/US]; The Johns Hopkins University, Suite 906, 111 Market Place, Baltimore, MD 21202 (US). MOTHET, Jean-Pierre [US/US]; The Johns Hopkins University, Suite 906, 111 Market Place, Baltimore, MD 21202 (US). BRADY, Roscoe, O., Jr. [US/US]; The Johns Hopkins University, Suite 906, 111 Market Place, Baltimore, MD 21202 (US). FERRIS, Christopher, D. [US/US]; The Johns Hopkins University, Suite 906, 111 Market Place, Baltimore, MD 21202 (US).	
(30) Priority Data: 60/116,333 19 January 1999 (19.01.99) US 60/144,839 21 July 1999 (21.07.99) US 60/145,953 28 July 1999 (28.07.99) US		(74) Agents: KAGAN, Sarah, A. et al.; Banner & Witcoff, Ltd., 11th floor, 1001 G Street, N.W., Washington, DC 20001-4597 (US).	
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Applications US 60/145,953 (CON) Filed on 28 July 1999 (28.07.99) US 60/144,839 (CON) Filed on 21 July 1999 (21.07.99) US 60/116,333 (CON) Filed on 19 January 1999 (19.01.99)		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(71) Applicant (for all designated States except US): THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE [US/US]; Suite 906, 111 Market Place, Baltimore, MD 21202 (US).		Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	
(54) Title: MAMMALIAN SERINE RACEMASE			
(57) Abstract			
<p>High levels of D-serine occur in mammalian brain, where it appears to be an endogenous ligand of the "glycine site" of NMDA receptors. We have purified from rat brain a soluble enzyme that catalyzes the direct racemization of L-serine to D-serine. Purified serine racemase has a molecular weight of 37 kDa and requires pyridoxal 5'-phosphate for its activity. The enzyme is highly selective toward L-serine, failing to racemize any other amino acid tested. We have also identified polynucleotide sequences which encode mammalian, including human, serine racemase. Compounds which modulate the activity of mammalian serine racemase are useful for treating conditions and diseases which involve overstimulation of NMDA receptors, such as stroke and various neurodegenerative diseases.</p>			